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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/992,911	11/16/2001	Mark A. Horowitz	RB1-011US	6963

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EXAMINER

LUGO, DAVID B

ART UNIT	PAPER NUMBER
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2637

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/992,911

Applicant(s)

HOROWITZ ET AL.

Examiner

David B. Lugo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-49 is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 10 and 13 is/are rejected.
- 7) ☒ Claim(s) 7, 9, 11 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/23/02, 9/29/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 9/29/05 with respect to the rejection of claims 1-3 under 102(b) as being anticipated by Temple et al. have been fully considered but they are not persuasive. Applicant argues that Temple does not disclose encoding data values represented by sets of N bits to produce corresponding sets of M symbols, each of the symbols representing a plurality of bits. As stated by Applicant, Temple discloses use of a 3/6 binary code using 6 bits to represent the 16 hex code digits. Each of the hex code digits is considered to be a symbol, each of the symbols thus representing a group of 6 bits. Temple it thus considered to teach the limitations of claim 1.

2. Applicant's arguments, see page 14, filed 9/29/05, with respect to the rejection of claims 6 and 8 under 102(b) as being anticipated by Dorros have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. In addition, the rejection of claims 9, 10 and 13 under 103(a) in view of Dorros have been withdrawn, as claims 9, 10 and 13 depend from claim 6, the rejection of which has been overcome. However, upon further consideration, a new ground(s) of rejection is made in view of Sawai U.S. Patent 3,521,274.

3. Applicant's arguments, see page 14, filed 9/29/05, with respect to the rejection of claims 37, 39, 41 and 43 under 102(e) as being anticipated by Mansur have been fully considered and are persuasive. The rejection has been withdrawn.

4. Applicant's arguments, see page 15, filed 9/29/05, with respect to the rejection of claims 1, 3-5, 37, 39 and 41-43 under 35 U.S.C. 103(a) as being unpatentable over Franaszek in view of Perino et al. have been fully considered and are persuasive. The rejection has been withdrawn.

Claim Objections

5. Claim 13 is objected to because of the following informalities:

Line 2, "the method of claim 0" should be --the method of claim 6--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Temple et al. U.S. Patent 5,142,167 (previously disclosed by applicant).

Regarding claim 1, Temple et al. disclose a system in Fig. 2 for transmitting data on a multi-conductor signal path where a change in current flow between successive data transitions is reduced by encoding sets of bits to produce sets of symbols, where data is encoded using a 3/6 code to produce a current with a constant current supply (col. 3, lines 14-26), where 6 bits are used to represent the 16 hex code digits, each of the hex code digits considered to be a symbol, which is transmitted on the signal lines connected to I/O devices 2-24 for each group of three bits.

Regarding claim 2, each hex symbol represents more than three bits.

Regarding claim 3, the data received on the signal lines is decoded in decoder 70.

8. Claims 1 and 3-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Perino et al. U.S. Patent 6,005,895 (previously disclosed by Applicant).

Regarding claim 1, Perino et al. disclose a method for multi-level signaling comprising encoding data values represented by N bits to produce a set of M symbols as shown in Table 1,

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where each of the symbols (A-D) represents a plurality of bits, and each set of M symbols is selected to produce a constant current flow (col. 3, lines 55-62), and where the set of M symbols is transmitted.

Regarding claim 3, the transmitted symbols are decoded at a receiver 196 (Fig. 10).

Regarding claim 4, each of the conductors support 4 symbols (col. 4, lines 20-24).

Regarding claim 5, each symbol represents 2 bits (see Table 1).

9. Claims 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Sawai U.S. Patent 3,521,274.

Regarding claim 6, Sawai discloses a method of multi-level signaling, where a level sum of a signal is determined in adder 3 (col. 3, lines 32-45), and where a code converter 4 encodes the data to an appropriate code if the code has a large level-sum, P (col. 4, lines 58-66), where data at a level P would result in a data element not within a predetermined range of current values (i.e. not below P), and the encoding would be such that the signal current required to transmit the data would be within the predetermined range.

Regarding claim 8, the encoded data is transmitted (see Fig. 2).

Claim Rejections - 35 USC § 103

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawai.

Regarding claim 10, Sawai discloses a multilevel transmission system as disclosed above, but does not expressly disclose that the data element is a byte of data.

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However, the use of a byte of data (i.e. eight bits) in the system of Sawai is considered a design choice that fails to patentably distinguish over Sawai. Thus, it would have been obvious to one of ordinary skill in the art to implement a byte of data as the data element in the system of Sawai as a matter of design choice.

Regarding claim 13, Sawai discloses a multilevel transmission system as disclosed above, where the method is performed using hardware (Figs. 2-4), but does not expressly disclose that the method may be executed on a computer readable media storing computer-executable instructions. However, it is well known in the art to use instructions stored in memory to perform encoding functions in a communication system as software and hardware implementations are well-recognized art equivalents. Therefore, it would have been obvious to one of ordinary skill in the art to implement the system of Sawai using computer instructions stored in memory because it is a well-recognized art equivalent to a hardware implementation.

Allowable Subject Matter

12. Claims 14-49 are allowed.
13. Claims 7, 9, 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

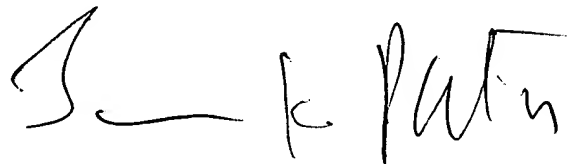
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David B. Lugo whose telephone number is 571-272-3043. The examiner can normally be reached on M-F; 9:30-6.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Lugo
12/22/05

A handwritten signature in black ink, appearing to read "Jay K. Patel". The signature is stylized with a large initial "J" and a long horizontal stroke.

JAY K. PATEL
SUPERVISORY PATENT EXAMINER